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Environmental Health News

Georgia Southern University

Georgia Southern participates in an international study to search for a common molecular indicator of microbial pollution in global waters

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Health-related water microbiology moved towards molecular detection methods in the recent years. These new methods allow for rapid response to mitigate outbreaks within hours and they can track the source of the pollution accurately. However, the widespread application is hindered by a lack of knowledge regarding geographical stability, and only a small number of well-characterized regions can effectively use these methods. This study investigates the geographic distribution of five human-associated genetic markers in municipal wastewaters (raw and treated) from 29 urban and rural wastewater treatment plants in 13 countries spanning six continents. Also, genetic markers were tested against 280 human and non-human fecal samples from domesticated, agricultural and wild animal sources. Results suggest that several genetic markers have considerable potential for measuring human-associated contamination in polluted environmental waters worldwide. The results of this study will be helpful in developing new global criteria for water quality management, pollution modeling, and health risk assessment.

"Global Distribution of Human-associated Fecal Genetic Markers in Reference Samples from Six Continents" was recently published in the "Environmental Science and Technology" journal.

Dr. Asli Aslan, Assistant Professor of Environmental Health Sciences at the Jiann-Ping Hsu College of Public Health Georgia Southern was a co-author of this study.

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